ADVANCED ELECTRONIC APPLICATIONS, INC.

P.O. Box 2160
Lynnwood, Washington 98036 USA
206-775-7373

AT-300™ and AT-3000™ Antenna Tuners

Affordable antenna tuners from a name you can trust
The AT-300™ and AT-3000™ from AEA.

The new AT-300™ and AT-3000™ antenna tuners are designed to match your transceiver and antenna for their most efficient operation and maximum power output.

Low Pass Design

The low-pass design of the AT-300™ and AT-3000™ is what you would expect from a company where **Engineering Makes the Difference**. The low-pass design of the AEA tuners means harmonic attenuation for lower TVI potential. This design also allows matching a much wider range of antenna impedances than the common high-pass designs.

Larger Size

One look at the AT-300™ and AT-3000™ lets you know these tuners are different, they're bigger. While some manufacturers promote the small size of their tuners, AEA knows that performance is most important. The simple reason for the larger size is that smaller sizes degrade the inductors' Q (Quality factor), which results in less efficiency. Less efficiency means that for a given power output from your transmitter, less power will actually get to your antenna.

Easy Operation

The AT-300™ and AT-3000™ tuners feature a precision frequency compensated dual-movement SWR meter for ease of tuning. The high and lower power front panel switch selects the proper range for the SWR meter. The AT-300™ is rated for 300 watt operation, while the AT-3000™can handle 3 KW. The internal balun and front panel selector switch allow for balanced and unbalanced outputs.

Get maximum performance from your transceiver and antenna by using the AT- 300™ or AT-3000™ antenna tuners from AEA. Contact your local AEA dealer today.

AT-3000™ AEA Retail $299.95 Amateur Net $259.95

AT-300™ AEA Retail $199.95 Amateur Net $159.95

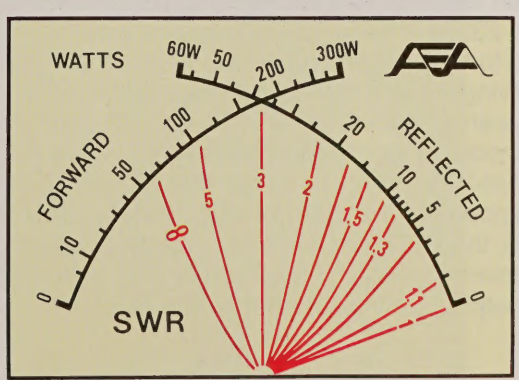
Specifications

Front Panel Indicators and Controls
Meter - Dual movement D'Arsonval cross needle power and SWR Meter

Controls
Transmitter Tuning - 18 position
Antenna Tuning - 18 position
Reactance - Continuous
Antenna Selector - 6 position; Antenna 1 tuned and tuner bypass, Antenna 2 tuned and tuner bypass, Dummy load (External), Balanced Antenna
Power Switch - 2 position high/low
Lamp - light control for meter

Rear Panel Connectors
Antenna 1 - SO239 connector
Antenna 2 - SO239 connector
Dummy load - SO239 connector
Transmitter Input - SO239 connector
Balanced Output - Ceramic feed-through insulators
Power - 12 VDC for meter lamp, AC-1 adapter available

Dimensions
AT-300tm 5.5″H × 13″W × 11.5″D
AT-3000tm 6.5″H × 13″W × 12.5″D



The easy to read D'Arsonval movement cross needle power and SWR meter shows forward and reflected power simultaneously.

RFM–220™ Radio Modem

The new RFM-220 Radio Modem is really more than just a radio, it's a high speed packet modem and 220 transceiver combination.

The RFM-220 is the next step in packet radio technology. When attached to a packet TNC (like the AEA PK-87 or PK-232) the RFM-220 high speed modem can be used to transmit and receive data at up to 19.2 K Baud. Achieving these faster data rates required AEA to draw on years of packet experience and the ability to design a transceiver/modem combination as a single unit. The RFM-220 modem is compatible with all TNCs that are equipped with an external modem disconnect.

In addition, the RFM-220 is a fully synthesized transceiver that covers the entire amateur 220 Mhz band with adjustable output from 1 to 20 Watts. The CPU controlled synthesizer offers 100 memory channels with memory and band scan. The RFM-220 has programmable Transmit/Receive offset in 10 KHz steps from 10 KHz to 5 MHz.

Designed for high speed data transmission, the RFM-220 is also a high fidelity voice transceiver with deviation settable from 4 to 10 KHz. Receiver sensitivity is .6 microvolt for 12 db SINAD. Superior sensitivity, selectivity, and dynamic range is achieved using a GaAs FET receiver front end and multiple helical resonators. The RFM-220 is powered by 13.5 VDC (external supply required), 2 amps on receive - 8 amps on transmit.

The RFM-220 is designed for those who are ready for the next breakthrough in packet technology.

AEA Retail $1495.95 **Amateur Net $995.95**

Specifications

GENERAL
- Dimensions: 11¼ × 8½ × 3¼ in. exclusive of heatsink
- Case: Sheet Metal, Painted
- Weight: 8 pounds
- Power: 13.5 VDC (12 to 16), 2 A Receive, 6 A Xmit,
- Fuse: 8 Amp internal
- Antenna Connector: SO239
- PC Boards: 5 (Controller, RF, Display, Oscillator, Amp)
- Speaker: Internal, Defeated using Ext Spkr jack
- Certification: Part 15 Subpart J FCC Specifications

PROCESSORS AND MEMORY
- Crystal: 10 MHz (Crystal Oven .5ppm)
- Clock Rate: 2.5 MHz
- CPU: Z80
- RAM: 8 KBytes, expandable to 32KBytes
- ROM: 16 KBytes, Program Memory
- Battery backup: Lithium, 2 Years
- UART: Z80 DART

DATA I/O
- Connector Type: DIN, 5 Pin (TXD RXD SQ PTT GND)
- Signal Levels: TTL
- Radio Baud Rates: 0-19,200 bit per second direct FSK
- AFSK (via mic jack): 300-1200 Baud

VOICE
- Voice Input: Data PTT or Voice PTT determines mode
- Settable Deviation: 4-10 KHz, Continuously variable, internal pot

PROGRAMMING
- Band Scanning: Upper/Lower Freq Settable Endpoints, 5 KHz steps, resumes on absence of signal
- Memory Scan: Up to 100 channels, scanned in increasing channel order
- Functions Programmable: Frequency, TX Offset, Frequency Memories, Bandscan Limits, Transmit, Receive
- Program Input: Via 5-pin DIN RS-232C connector, 300/600/1200/2400/4800/9600 Baud; 7 data bits, even parity, 1 stop bit
- Command Structure: Two character mnemonic plus argument; defeatable acknowledge

RADIO
- Emission Type: 20F9 for 19.2 KBaud bit rate
- Operating Frequency: 220 - 225 MHz in 5KHz steps
- Frequency Offset: Programmable 10KHz steps. 10KHz to 5 MHz
- Crystal: 10 MHz, Ovened

Transmitter
- Power Output: 1-20 Watts, Continuously Variable (internal adjustment)
- FM Hum and Noise: −50 db
- Spurious/Harmonic Output: −60 dbc
- Response Time: Full power output response to a TTL transition at PTT plus 5 msec

Receiver
- Sensitivity: .6 microvolt for 12 db SINAD
- IF Selectivity: 30 KHz at 6 db
- Response Time: Recognizes a received bit at PTT drop plus 5 msec
- Front End: GaAs FET, Multiple Helical Resonators

CONTROLS AND INDICATORS

Front Panel
- Mic Connector: 8 Pin (Mic, PTT, Gnd, Up, Down)
- S Meter: S/RF
- Frequency Readout: 4 Digit LED
- Power Switch: 2 Position, Toggle
- Frequency: 3 Position, Up, Down, Center Off
- Scan Limit Switch: 3 Position, Scan Max, Scan Memory, Center Normal
- Volume: Rotary Potentiometer
- Squelch: Rotary Potentiometer
- DCD LED: Unlabeled (On concurrent with incoming signal)

Back Panel
- Power: Two Pin, polarized, Type CB2, with Reverse Voltage Protection
- Baud Rate DIP Switch: 300,600,1200,2400,4800,9600
- RS-232 Connector: 5 Pin DIN (for RFM-220 control)
- Ext Speaker: 3.5 mm Jack
- Amp Control: RCA Jack (PTT to AEA External Optional Power Amplifier), open NPN collector
- Antenna: UHF, (SO 239)
- Heat Sink: Finned, 4½ × 2½ × 1⅜ deep

PK-88™ Packet Controller

Improved hardware and software design make the PK-88 your best choice for a packet-only controller. Integrating the popular packet software from the multi-mode PK-232 with a special AEA TNC hardware design gives you the best of both worlds.

The new Maildrop feature of the PK-88 gives you the convenience of a personal mailbox. You can program 8K of memory in up to 15 different files with information that others can download. This information can be programmed for retrieval by a specific callsign, or made available to all connecting stations. Maildrop will also store incoming data sent to your station.

The PK-88 is compatible with the popular TCP/IP protocol, and can be modified for NET ROM operation. The unique host mode of the PK-88 also gives programmers the ability to write special terminal programs (like the AEA PC Pakratt and Com Pakratt programs) for full featured TNC use. Other software features of the PK-88 allow the operator to restrict the use of the station for both connects and as a digipeater. The mailbox monitoring command allows monitoring without displaying the callsign headers, while standard monitoring includes both MFROM and MTO lists.

While the PK-88 can be used for HF operation, AEA recommends the optional PM-1 packet modem for low band use.

For base station, portable, or digipeater operation the PK-88 makes packet radio easy and affordable.

AEA Retail $149.95 **Amateur Net $119.95**

Specifications

Operating Mode
- AX.25V2L2 Packet (previous versions supported)
- Half/Full Duplex

Modem
- Input Sensitivity: 5 mvRMS
- Input Dynamic Range: 5 to 770 mvRMS
- Bypassable via Ext Modem connector for use with external modem
- Hardware Watch Dog Timer—1 minute timeout
- Demodulator: AMD 7910 World Chip
- Modulator: Phase-continuous sinewave AFSK generator
- Modulator output level: 5-300 mvRMS, rear panel adjustable

Processor System
- Processor: Zilog Z80
- RAM: battery backed, 32K Bytes
- ROM: 32K Bytes
- Hardware HDLC: Zilog 8530 SCC

Rear Panel Input/Output Connections
- Radio Interface: 8 pin; Receive Audio, Transmit Audio, PTT, Auxilliary Squelch, Ground
- Audio In/Out: 3.5mm connector
- External Modem: 5 pins DB-25; Transmit data, Receive data, carrier detect, Clock, Ground
- Terminal Interface: RS-232 25 pin DB25 connector
- Terminal Data Rates: 300, 1200, 2400, 4800, 9600 (with autobaud select)

Front Panel Indicators:
- Indicators: Operational Modes; Converse, Transparent, Command; Send, Data Carrier Detect, Status, Connect, Multiple Connect

Power
- +12 to +16 VDC @ 550ma, 2.1mm power connector, center positive
- AC-1 120 VAC adapter available

Physical
- 7.5″ × 6″ × 1.5″, 2 lbs. 6 oz.

PM-1™ Packet Modem

The AEA PM-1 Packet Modem is designed to bring your current TNC up to AEA standards for HF operation. The phase locked loop or "world chip" demodulators (used in TNC 2, PK-80, PKT-1, PK-87, TNC-1 and others) work well on VHF FM, but leave a lot of room for improvement in HF radio environments.

The PM-1 connects directly to your TNC and transceiver with no internal modifications to either unit. The PM-1 contains independent dual channel filtering with AM detection for maximum sensitivity and selectivity under poor HF conditions. The PM-1 is optimized for 300 baud operation. A shift frequency of 200 Hz or 600 Hz may be selected from the front panel, and a front panel bar graph tuning indicator is provided to assist the user in precise HF tuning. There is also a front panel squelch control (variable DCD) provided for sensitivity adjustment under various noise conditions. With the PM-1 you can switch between HF and VHF packet operation by simply pushing one button.

AEA Retail $239.95 **Amateur Net $199.95**

Specifications

TNC Connector
- Audio Output (To TNC RX In) 1200, 2200 Hz Nominally 180 mv rms

Pin 2
- Audio Input (From TNC TX Out) 1200, 2200 Hz 15 mv to 5 v rms

Pin 3
- External Squelch

Pin 4
- Ground

Pin 5
- PTT Input

VHF Radio Connector
Connected to TNC connector when PM-1 power switch is off

Pin 1
- Receive Audio 2110 (1710 Hz at 600 Hz shift) 2310 Hz center frequencies, 15 mv to 1 v rms

Pin 2
- Transmit Audio 2110 (1710 Hz at 600 Hz shift 2310 Hz, 0 to 100 mv rms rear panel adjustable Active only during TNC PTT

Pin 3
- External Squelch - Connected to TNC pin 3 when power switch is on

Pin 4
- Ground

Pin 5
- HF Transmitter PTT - Also selected by PM-1 power switch

HF Receive Demodulator
Two 4 pole Chebyshev .5 db ripple channel filters follwed by twin full wave detectors and an automatic threshold corrector. Followed by a 2 pole Chebyshev low pass filter to enhance weak signals.

Power Requirements
12 to 15 VDC at 200 ma. (not supplied)

Physical
6″ × 2″ × 10″ ×, 2 lbs. 8 oz.

Handheld DX with the DX Handy™

The idea of handheld DX seems far-fetched, but it's actually very simple. The DX Handy is a battery powered (six penlight AA drycells included) SSB/CW transceiver with two watts output. DX Handy can also use nicad rechargeable batteries, or be powered with 9 VDC.

Two variable crystal oscillators (VXOs), each with 50 KHz range, can be selected with a top panel switch. Crystals for 28.250 to 28.300 and 28.300 to 28.350 Mhz are included in the ten meter DX Handy. Crystals for 50.1 to 50.15 and 50.25 to 50.3 are included in the six meter DX Handy. Other crystals are available at a nominal cost.

CW operation can be by either the built-in push button or with an external key or keyer. External speaker and microphone jacks are also provided, and the telescoping antenna is included. The DX Handy also has a top panel S-meter/ output power meter and an effective noise blanker circuit. DX Handy is housed in an attractive gray metal case comparing in size to popular VHF FM handhelds.

With DX Handy all amateurs, novice to extra class, can enjoy the thrill of working handheld DX.

AEA Retail $379.95

Amateur Net $319.95

Specifications

General

- Frequency Coverage: Any 50 KHz segments in the 28.0 to 29.0 MHz Amateur Band for the ten meter version, or an 50 KHZ segments in the 50.1 to 50.3 MHz Amateur Band for the six meter version
- Frequency Control: VXO provides 50 KHz of continuous tuning with a single crystal
- Frequency Stability: Within ±500 Hz from a cold start
- Antenna: 50 Ohms Unbalanced, BNC connector
- Power Requirement: 8.4–9.0 VDC
  (Included): 6-AA Dry Cells (1.5 volt/cell) = 9.0 VDC
  (Optional): 7-AA NiCads (1.2 Volt/cell) = 8.4 VDC
- Current Drain: Receiving - Approx. 70 mA
  Transmitting - Approx. 620 mA
- Dimensions: (W) 66mm × (H) 39mm × (D) 142mm
- Weight: 710 Grams (1 lb. 9 oz.) with batteries and antenna

Transmitter

- Output Power: Ten Meter DX Handy - 2 Watts at 9.0 VDC
  Six Meter DX Handy - 1 Watt at 9.0 VDC
- Emission modes: A3J (USB) and A1 (CW)
- Spurious Emissions: More than 40 dB down

Receiver

- Sensitivity: less than 0.5 uV for 15 dB S/N
- Intermediate Frequency: 11.2735 MHz

Controls and Indicators

- On/Off Volume control Top mounted Potentiometer
- Receiver Incremental Tuning (RIT): Top mounted Potentiometer with center off detent position
- Frequency: Top mounted 50 KHz VXO
- Frequency Range: Top mounted 2-position switch
- Noise Blanker: Top mounted On/Off switch
- S/RF meter: Top mounted S/RF meter
- Built in CW key: Top mounted momentary switch
- External Speaker output: Top mounted 1/16" phone jack
- External Microphone input: Top mounted 1/8" phone jack
- Antenna Connector: Top mounted Female BNC
- Transmit Indicator: Top mounted Transmit LED
- Push-To-Talk: Side mounted momentary switch
- External Power: Bottom mounted 2.1 mm coaxial
- External key input: Bottom mounted 1/8" phone jack
- Mode Selector Switch: Bottom mounted 2-position switch
- Charge/External Power: Bottom mounted 2-position switch selecting 12 VDC external power function

Specifications and prices subject to change without notice or obligation.

The PK-232™ Multimode Dat

The PK-232 is the best amateur multimode data controller you can buy. No other controller offers Morse Code, Baudot, ASCII, AMTOR, Packet, and Facsimile transmission and reception, and the ability to monitor the new Navtex marine weather and navigational system. Only the PK-232 offers seven operational modes in one controller.

The PK-232 makes any RS-232 compatible computer or terminal the complete amateur digital operating position. All decoding, signal processing, and protocol software is on ROM in the PK-232. Only a simple terminal program (like those used with telephone modems) is required to interface the PK-232 with your computer. The PK-232 package includes a special terminal /printer "Y" cable that connects the PK-232 to both the serial RS-232 port of the computer and the parallel printer port for FAX printing.

The real strength of the PK-232 is its superior design. The PK-232 is a Z-80A based system and has hardware HDLC using the Zilog 8530 SCC. The internal modem of the PK-232 can transmit packet at rates from 24 to 1200 baud, with the option of using an external modem for higher baud rates up to 9600 baud (modifiable for 19.2 K baud). The PK-232 also has a no compromise VHF/HF/CW modem with an eight pole bandpass filter followed by a limiter discriminator with automatic threshold correction. The PK-232 modem can copy shifts from 85 to 1500 Hz in two ranges. Transmitter tones are low distortion sinewave phase continuous AFSK, Bell 202 standard (1200-2200 Hz) for VHF, and 2110-2310 (compatible with 170Hz shift for RTTY) for HF.

The PK-232 internal software includes special features like SIAM™ (Signal Identification and Acquisition Mode). This mode lets you tune an unidentified signal and watch the PK-232 decide the incoming signals' mode, baud rate or speed and configuration. Additional commands even allow you to decode simple types of Baudot encryption. In addition to Baudot, ASCII, and AMTOR, the PK-232 will copy the third register cyrillic alphabet of five level baudot, and Japanese Katakana and Russian Cyrillic Morse code.

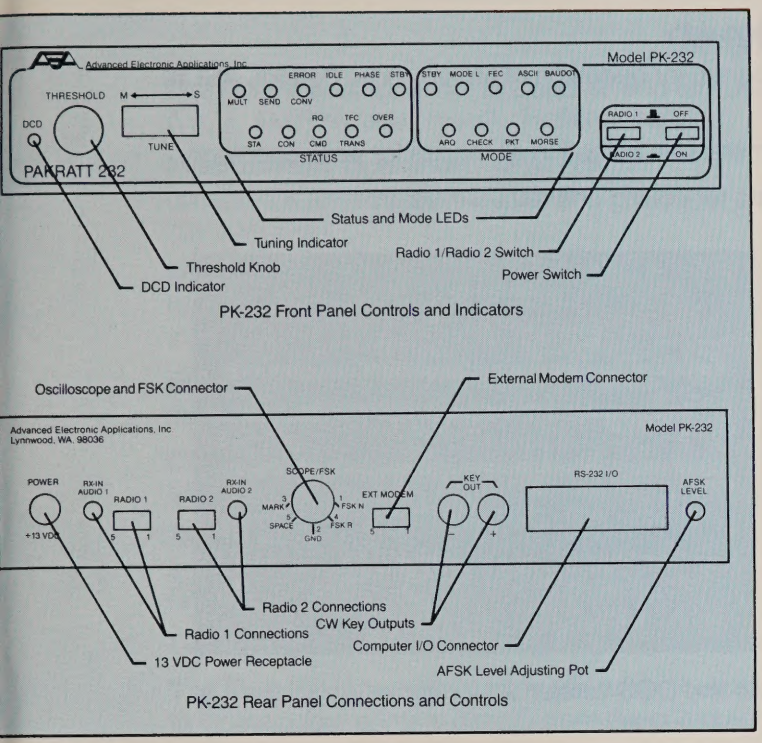
In packet the PK-232 internal program is also compatible with the popular TCP/IP networking protocol. This protocol requires the TNC to feature special commands, (Kiss, Persistence, Slottime) not found in all controllers. The p-persistence method of packet channel access is available in both host and verbose modes.

The Host mode (a kind of computer to computer shorthand) of the PK-232 also allows programmers to write special terminal programs, like PC Pakratt and Com Pakratt, for full featured multimode operation. You can also use the PK-232 with the popular WØRLI and WA7MBL packet bulletin board programs.

Compare the PK-232 to any other amateur controller. You won't find all these features available at any price.

FAX Printing—Many parallel printers can be connected directly to the PK-232 to print HF monitored FAX signals. The PK-232 supports Epson, IBM, and other popular dot matrix graphics printing standards.

Controller



PK-232 Front Panel Controls and Indicators

PK-232 Rear Panel Connections and Controls

Easy Efficient Operation—Twenty-one front panel indicators make multimode operation simple by giving mode and status information at a glance.

Comprehensive User's Manual—With a "Quick Start" section to get you on the air fast , the 328 page manual gives you all you need including schematics and parts list. Technical reference manual is also available.

Battery Backed RAM—No need for "perming," all operating parameter values, including beacon and connect message texts, are saved and continually updated.

Adjustable Threshold Control—Front panel continually-variable 5 mode threshold control permits critical adjustment of effective modem sensitivity and squelches output of "garbage" to screen or printer.

Two Radio Ports—Independent radio connection ports allow interchangeable HF or VHF operation. Front panel push button selectable.

External Modem Disconnect—Internal modem bypass guarantees compatibility with higher speed modems such as the AEA RFM-220.

External AFSK Level Adjustment—Rear panel control permits easy AFSK level changes for different radios and modes.

Scope and FSK Outputs—A separate accessory port gives both scope mark and space outputs and permits connection to your HF radio's FSK input.

Specifications

Modem
- Input Dynamic Range: 5mv to 500 mvRMS
- Bypassable via Ext Modem connector for use with external modem
- Hardware Watch Dog Timer—1 minute timeout
- Onboard calibration software and hardware
- Demodulator: 8 pole bandpass filter, limiter, 4 pole discriminator, 5 pole post-detection low pass filter.
  VHF Packet: 1700 Hz center frequency, 2600 Hz BW
  HF (non CW): 2210 Hz center frequency, 450 Hz BW
  CW: 800 Hz center frequency, 200 Hz BW
- Modulator: Phase continuous sinewave AFSK generator
- Modulator output level: 5-100 mvRMS, rear panel adjustable

Packet Protocol
- AX.25 V2L2 (previous versions supported)

Processor System
- Processor: Zilog Z80
- RAM: battery backed, 16KBytes
- ROM: 32KBytes, 48KBytes max
- Hardware HDLC: Zilog 8530 SCC

Rear Panel Input/Output Connections
- Radio Interfaces: Two 5 pin; front panel selectable (receive audio, transmit audio, PTT, Auxillary squelch, Ground)
- External Modem: 5 pin; Transmit data, Receive data, Carrier detect, Clock, Ground
- FSK Outputs: normal and reverse
- Scope Outputs: Mark, Space
- CW Keying Outputs: +100VDC @ 100 ma max, or −30VDC @ 20 ma max
- Terminal Interface: RS-232-C 25 pin DB25 connector (pins 1-8 and 20 software and hardware handshake)
- Terminal data rates: 300, 1200, 2400, 4800, 9600 baud

Front Panel Controls and Indicators
- Controls: Power, Radio selector, Threshold adjust
- Indicators: Data Carrier Detect LED, 10 Segment HF Bargraph Tuning Indicator, Mode Indicators (Baudot, ASCII, PTT, Morse, Check, FEC, ARQ Mode L, STBY), Status Indicators (STBY, Phase, Idle, ERROR/Conv, Over)

Power Requirements
- +12 to +16 VDC @ 700ma, 2.1 mm connector, center pin positive
- Reverse polarity protection (internal 1 amp fuse)
- Optional AC-4 VAC Adapter available

Physical
- 11″x 8.25″x 2.5″, 3 lbs.

AEA Retail $379.95 **Amateur Net $319.95**

PC Pakratt with Fax

AEA has created two very special IBM PC or compatible computer programs to support the PK-232 multi-mode data controller. These two programs, PC Pakratt and PK Fax, are available on two 5¼ inch disks in a single package called PC Pakratt with Fax.

PC Pakratt

The PC Pakratt program is a split screen terminal program for operation of Morse code, Baudot, ASCII, AMTOR, and Packet. Features include:

Friendly Help Menu - Defines commands and parameters on screen in all modes for easy operation.

Up to 64K byte QSO Buffer - Stores all incoming data for editing and retransmission.

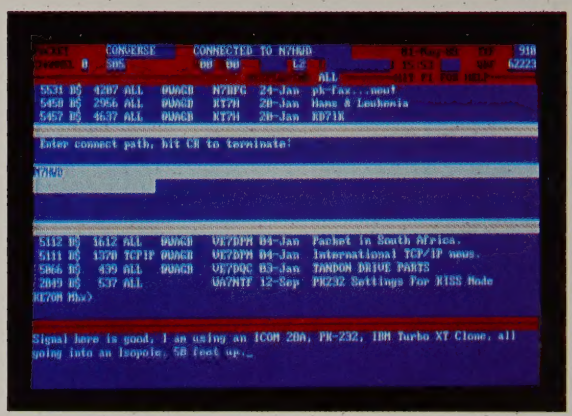
Built in Editor - Simple yet full featured text editor for text file editing.

Color Monitor Compatibility - Select different colors for text, background, and border screen display.

Ten Message/Command Buffers - Pre-program messages or commands for transmission with a single keystroke.

Disk Operation - Supports disk directory, file transfer, and storage of data received.

Parameter Display - Exclusive display of all important parameters on one screen.


CONVERSE
CONNECTED TO N7HWD
Enter connect path, hit CR to terminate:
N7HWD
Signal here is good, I am using an ICOM 20A, PK-232, IBM Turbo XT Clone, all going into an Isopole, 58 feet up.

The PC Pakratt program requires 320K RAM minimum and DOS version 2.1 or higher.

PK Fax

The PK Fax program allows screen display, disk storage, and transmission of facsimile signals. Features include:

Facsimile Screen Display - All standard radio facsimile formats can be displayed.

Automatic Disk Storage - Received signals can be stored to either floppy or hard disk automatically.

Paintbrush Compatible - Convert received signal files to Paintbrush compatible format.

Facsimile Transmission - Transmit files, including Paintbrush files, in the fax mode.

Printer Compatible - Print received files with most printers capable of dot matrix graphics.

Screen Zoom - Enlarge any ¼ screen to four times normal size for closer inspection.

PK Fax is compatible with CGA, EGA, and Hercules compatible graphics adapter cards. No hardware or software changes are necessary to any FAX compatible PK-232. PK Fax requires 384K internal computer memory and two disk drives are recommended.

PC Pakratt with Fax AEA Retail $49.95 **Amateur Net $39.95**

Com Pakratt with Fax

AEA has created two very special Commodore 64 programs to support the PK- 232 multi-mode data controller. These two programs, Com Pakratt and Com Fax, are available on two ROM plug-in cartridges in a single package...Com Pakratt with Fax.

Com Pakratt

The Com Pakratt program is a split screen terminal program for operation of Morse code, Baudot, ASCII, AMTOR, and Packet. Features include:

Function Key Operation - Most common commands are programmed for direct function key operation.

QSO Buffer - Incoming data is automatically routed into a QSO buffer capable of holding up to 13K.

Program on Cartridge - Easy to use ROM cartridge means disk or cassette drive is not needed.

Color Monitor Compatibility - Select background, text, highlight, and echo colors.

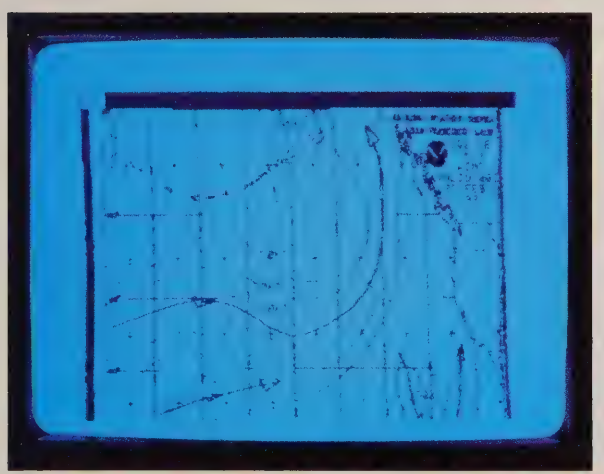
Ten Message/Command Buffers - Six preset and four programmable memories for CQ, QBF, RY, Time, Callsign, and Selcal.

Disk Operation - Supports disk directory, file transfers, and storage of received data.

The Com Pakratt program supports printer output for Morse code, Baudot, ASCII, AMTOR, and packet to Commodore printers directly from the computer.

Com Fax

The Com Fax program allows screen display, disk storage, and transmission of facsimile signals. Features include:



Facsimile Screen Display - All standard radio facsimile formats can be displayed.

Function Key Operation - Most common commands are programmed for direct function key operation.

Printer Compatible - Supports printer output to VIC 1525 or MPS 801 compatible printers.

Screen Zoom - Enlarge any ¼ screen to four times normal size for closer inspection.

Disk Operation - Supports disk directory, load/save fax buffer, and disk commands.

Facsimile Transmission - Transmit files directly from the fax buffer.

Com Pakratt with Fax includes two programs (Com Pakratt and Com Fax) on plug-in ROM cartridges and the RS-232 to TTL hardware interface. No hardware or software changes are necessary to any FAX compatible PK-232.

Com Pakratt with Fax AEA Retail $79.95 **Amateur Net $69.95**

Improve VHF/UHF Performance with the IsoPole™ Antennas

Outstanding mechanical and electrical design makes the IsoPole the only logical choice for a VHF base station antenna. All IsoPole antennas yield the maximum gain attainable for their respective lengths and a zero degree angle of radiation. Exceptional decoupling results in simple tuning and a significant reduction in TVI potential. Cones offer great efficiency over obsolete radials which radiate in the horizontal plane and present an unsightly birds roost with an inevitable "fallout zone" below. The IsoPoles have the broadest frequency coverage of any comparable VHF base station antenna. This means no loss of power output from one end of the band to the other, when used with SWR-protected solid state transceivers. Typical SWR is 1.4 to 1 or better across the entire band!

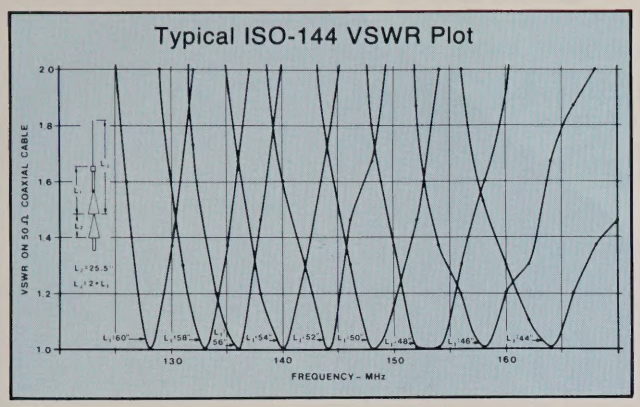
For VHF versions, a standard 50 Ohm SO-239 connector is recessed within the base sleeve (fully weather protected). With the IsoPole, you will not experience the aggravating deviation in SWR with changes in weather. The impedance matching network is designed for maximum legal power and even compensates for the impedance lump introduced by the SO-239 connector used in VHF models.

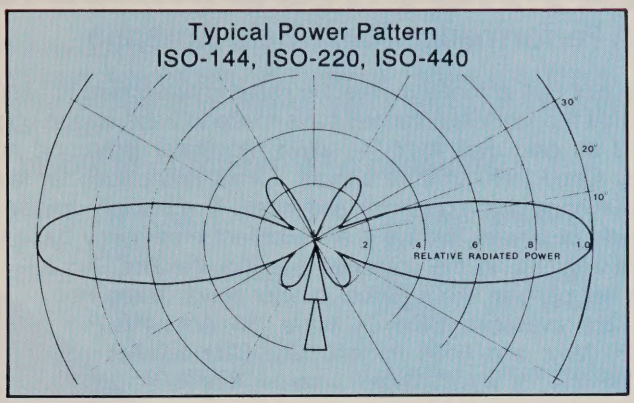
The insulating material offers superb strength and dielectric properties plus excellent long-term ultra-violet resistance. All mounting hardware is stainless steel. The decoupling cones and radiating elements are made of corrosion resistant aluminum alloys. The aerodynamic cones are the only appreciable wind load and are attached directly to the support (a standard TV mast which is not supplied).

Isopole 144
AEA Retail $59.95 Amateur Net $49.95

Isopole 220
AEA Retail $59.95 Amateur Net $49.95

Isopole 440
AEA Retail $84.95 Amateur Net $69.95





Specifications

MODEL	144	220	440
Freq. Coverage (Mhz)	135-160	210-230	415-465
Impedance	50 Ohm	50 Ohm	50 Ohm
2.1 VSWR bandwidth	>10Mhz @ 146Mhz	>15Mhz @ 220Mhz	>22Mhz @ 435Mhz
Power rating	1 kw	1 kw	1 kw
Gain* (actual measurment)	3 dbd	3 dbd	3 dbd
Radiating Element Length	125.5" (3.2m)	79.25" (2m)	46" (1.2m)
Wind Area	<1 sq. ft.	<.75 sq. ft.	<.20 sq. ft.
Maximum Mast OD	1¼" (32mm)	1¼" (32mm)	1¼" (32mm)
Minimum Mast Length**	8 ft. (2.4m)	5½ ft. (1.6m)	6" (150mm)
Shipping Weight	5 lbs.	4 lbs.	2.5 lbs.
Coax Connector	PL-259	PL-259	Type N
*dbd—db gain over a dipole in free space			
**Mast not included			

Our Customers Say It Best . . .

The Isopole design is tried and true. For over eight years AEA has been selling this unique antenna to amateurs around the world. The reports we get from our customers tell the story.

I have had a two meter Isopole in service for three or four years now. Love it.
I. H. Princeton WV

Isopole can't be beat for ease of construction. Its performance is superb. I have a friend who says the Isopole ourperforms his eleven element beam. *G. S. Greensboro NC*

Good reports, superior performance. Recommended by several hams as best on market regardless of price. *D .W. Panama City FL*

Had an Isopole in Hawaii. Stood up to corrosion well. *R. S. Union City CA*

I had an Isopole before and went to a beam. The Isopole is a better all around antenna. *S. K. Russels Point OH*

I like the straightforward instructions and simple design of the Isopole.
D. G. Sterling Heights MI

Many ham friends highly recommend it. Glad I listened to my friends. Very happy with the Isopole. *W. M. Louisville KY*

AEA HOT ROD™

High Performance Hand-Held Antenna

The Hot Rod antenna makes the same improvement to hand-held communications that the IsoPole antennas have made to base station operation. Achieve 1 or 2 db gain over ANY ⅝ wave two meter telescopic antenna. The factory tuned HR-1 is 20% shorter, lighter and places far less stress on your hand-held connector and case. It will easily handle over 25 watts of power, making it an excellent emergency base or mobile antenna. In the collapsed position, the Hot Rod antenna will perform like a helical quarter wave. Three Hot Rods are available: HR-1 ½ wave 2M Ant., HR-2 for 220 Mhz. and HR-4 for 440 Mhz. The HR-4 is a flexible ½ wave "duck" antenna that is 16 inches long.

Amateur Net $ 19.95
AEA Retail $ 24.95

MU-64 Morse University™

Makes Learning Morse Code Easy and Fun

The Morse University program and a Commodore 64 computer can make learning Morse code easier that you ever thought. With the Learning Routine you'll learn the individual characters and numbers. The Proficiency Routine helps you increase your speed by generating random characters in groups. The Sending Anlaysis lets you check your fist by graphically displaying the characters you send using the keyboard function keys. You can even use your new skills to play the Receiving Game. A video game that shoots the antenna off your house with lightning bolts if you don't type in the characters sent.

The Morse University program is a ROM cartridge that plugs directly into the computer and does not require a disk drive. Morse University is compatible with the Commodore 64, 128, and 64-C.

Amateur Net Price $39.95 AEA Retail $49.95

Accessories

AC-1 Power Adapter

The AC-1 nominal 12 VDC wall adapter is a suitable power supply for all AEA products requiring 12 VDC at 600 ma or less current. The AC-1 comes with a six foot power cord and a standard 2.1 mm (center pin positive) coaxial power plug that mates with all AEA products. The AC-1 can also be used for any load requiring filtered, but unregulated nominal 12 VDC at 600 ma or less.

Amateur Net Price $14.95
AEA Retail $19.95

AC-1

AC-4 Power Adapter

Same as AC-1 except 1 amp output.

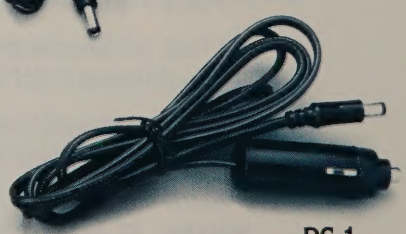
Amateur Net Price $24.95
AEA Retail $29.95

AC-4

DC-1 Cigarette Lighter Cord

The DC-1 is a fused cable with a standard cigarette lighter plug on one end and a 2.1 mm (center pin positive) coaxial cable plug on the other end.

Amateur Net Price $5.95
AEA Retail $6.95



DC-1

Authorized Dealers — Ordering Information

AEA is represented by the finest amateur radio dealers. These dealers offer the best prices on AEA products. The AEA Retail price is the cost for ordering the product direct from the factory. Washington residents add 7.8% sales tax. Factory direct orders also require $5.00 shipping and handling for U.S. orders, foreign orders please send inquiry for shipping and handling costs. The Amateur Net price is the advertised price for purchase through most of our Authorized Dealers.

Please contact one of the dealers listed below to purchase AEA products.

ARIZONA

Ham Radio Outlet
Phoenix, 602/242-3515

Pace Engineering
Tucson, 602/888-3333

CALIFORNIA

Ham Radio Outlet
Anaheim, 800/854-6046
714/761-3033

Ham Radio Outlet
Burlingame, 415/342-5757

Ham Radio Outlet
Oakland, 415/534-5757

Ham Radio Outlet
San Diego, 619/560-4900

Ham Radio Outlet
Van Nuys, 818/988-2212

Henry Radio
Los Angeles, 800/421-6631
213/820-1234

Jun's Electronics
Culver City, 213/390-8003
800/882-1343

Quement Electronics
San Jose, 408/998-5900

COLORADO

C.W. Electronics
Denver, 303/832-1111

Colorado Radio Center
Denver, 303/288-7373
800/227-7373

DELAWARE

Delaware Amateur Supply
New Castle, 302/328-7728
800/441-7008

FLORIDA

Amateur Electronic Supply
Clearwater, 813/461-4267

Amateur Electronic Supply
Orlando, 305/894-3238
800/327-1917

Eli's Amateur Radio Inc.
Ft. Lauderdale, 305/525-0103

Mike's Elec. Dist. Co.
Ft. Lauderdale, 305/491-7110

Quad Elec
Pensacola, 904/438-3319

GEORGIA

Doc's Communications
Rossville, 404/866-2302

Ham Radio Outlet
Atlanta, 404/263-0700

HAWAII

Honolulu Elec
Honolulu, 808/949-5564

IDAHO

Ross Distributing Co.
Preston, 208/852-0830

ILLINOIS

Erickson Communications
Chicago, 800/621-5802
312/631-5181

Floyd Electronics
Collinsville, 618/345-6448

INDIANA

Ham Station (The)
Evansville, 812/422-0231
800/523-7731

KANSAS

Amateur Radio Equipment Co.
Wichita, 316/264-9166

MASSACHUSETTS

Tel-Com Inc.
Littleton, 617/486-3400

MICHIGAN

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Flushing, 313/659-1776
800-PACKITT

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Mt. Clemens, 313/469-4656

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Hooper Electronic Supply
Biloxi, 601/432-0584

MISSOURI

Missouri Radio Center, Inc.
Kansas City, 816/741-8118
800/821-7323

NEW HAMPSHIRE

Rivendell Electronics
Derry, 603/434-5371

NEW JERSEY

KJI Electronics
Cedar Grove, 201/239-4389

NEVADA

Amateur Electronic Supply
Las Vegas, 800/634-6227
702/647-3114

Reno Radio
Sparks, 702/331-7373
800/345-5686

NEW YORK

Barry Electronics
New York, 212/925-7000

VHF Communications
Jamestown, 716/664-6345

NORTH CAROLINA

Williams Radio Sales
Colfax, 919/993-5881
800/523-0347

OHIO

Amateur Electronic Supply
Wickliffe, 216/585-7388
800/321-3594

R & L Electronics
Hamilton, 513/868-6399

Universal Amateur Radio
Reynoldsburg, 614/866-4267

OREGON

Portland Radio Supply Co.
Portland, 503/228-8647

PENNSYLVANIA

Ham Store (The)
State College, 814/238-3798

Hamtronics
Trevose, 215/357-1400

SOUTH DAKOTA

Burghardt Amateur Center
Watertown, 605/886-7314

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Memphis Amateur Radio
Memphis, 800/238-6168
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TEXAS

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Austin, 512/454-2994
800/423-2604

Electronic Center, Inc.
Dallas, 214/526-2023

Kennedy Associates
San Antonio, 512/680-6110

Madison Electronics
Houston, 800/231-3057
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A.R.T.S.
Spokane, 509/928-3073

WISCONSIN

Amateur Electronic Supply
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414/442-4200

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AEA World Clock

Amateur radio can take you around the world, and the new AEA World Clock lets you know the proper time when you get there. With dual digital displays you see local time and any of 24 selected time zones side by side. The slide bar on the bottom of the clock can be moved to the city/zone you want, and the display automatically changes to the proper time for that time zone.

24 Hour Display—Both displays show 24 hour time.

Lighted Display—Light button for night viewing.

Daylight Savings Switch—Shows Standard/Daylight Savings conversion.

Batteries Included—Two AAA batteries installed.

Date Line Indication—Display shows +/- for international day change.

Compact Size—2″ × 4.5″ × .5″

Alarm with delay—Six minute snooze feature included with alarm.

The AEA World Clock is perfect for use in the station and travel. A folding easel stand positions the clock for desktop use, and a leather-like travel pouch is also included. **Amateur Net $ 19.95** AEA Retail $ 24.95

All AEA products carry a 90 day warranty on parts and labor. Specifications and prices subject to change without notice or obligation.
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